

II. Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A dispensing cylinder comprising: a small diameter section, a large diameter section which communicates with said small diameter section and is capable of holding fluids, a sliding section provided in a slidable manner within said large diameter section which enables fluid to be sucked and discharged to and from said large diameter section through said small diameter section, and a connection section which connects said sliding section in a detachable manner to a suction and discharge mechanism which drives said sliding section;

wherein the sliding section comprises:

a disk-shaped piston which slides inside the large diameter section;

a rod, one end of which is secured to the piston, wherein the connection section is provided at the other end of the rod; and

a tube supported by an end of the large diameter section that axially opposes the small diameter section, the tube having a diameter and being positioned, relative to the rod, such that:

the rod passes through the inside of the tube,

relative axial movement between the rod and the tube is permitted,

the rod is substantially axially aligned with the large diameter section at the end of the large diameter section that axially opposes the small diameter section, and

the tube is axially positioned between the piston and the connection section and thereby prevents the piston from exiting the large diameter section through the end of the large diameter section that axially opposes the small diameter section.

2. (Canceled)

3. (Currently Amended) A dispensing cylinder according to either one of claim 1 and claim 2-claim 1, wherein an engagement section is provided on the outside of said small diameter section of said dispensing cylinder so as to surround the top of said small diameter section, and an opening of a sheath which covers said small diameter section, is fitted to said engagement section.
4. (Currently Amended) A large capacity dispensing device comprising:
one or more dispensing cylinders having, each of the dispensing cylinders comprising:
a small diameter section,
a large diameter section which communicates with said small diameter section and is capable of holding fluids,
a sliding section provided in a slidable manner within said large diameter section which enables fluid to be sucked and discharged to and from said large diameter section through said small diameter section, and
a connection section which connects said sliding section in a detachable manner to a suction and discharge mechanism which drives said sliding section connected to the sliding section so that the sliding section is axially positioned between the connection section and the small diameter section;
a suction and discharge mechanism, the suction and discharge mechanism comprising:
an actuating part which connects to each of said connection sections in a detachable manner and drives said sliding section[;]; and
a non-actuating part comprising [[a]]one or more fitting sections, each of which fits a respective one of said large diameter sections in a detachable manner to said suction and discharge mechanism to secure said respective large diameter section to said suction and discharge mechanism;
a container placement area in which a plurality of containers can be placed; and
a movement section which enables said one or more dispensing cylinders to move relative to said container placement area.

5. (Original) A large capacity dispensing device according to claim 4, comprising a gap elimination mechanism which eliminates a gap between said connection section of said dispensing cylinder, and a connection target section provided on said suction and discharge mechanism which connects to said connection section.
6. (Original) A large capacity dispensing device according to either one of claim 4 and claim 5, wherein said small diameter section of said dispensing cylinder comprises an engagement section formed so as to protrude outward from said small diameter section, and said container placement area contains in addition to a plurality of containers, one or more sheaths which can be fitted by engaging an opening thereof with said engagement section so that the sheath covers said small diameter section of said dispensing cylinder, arranged in a manner that enables fitting to said small diameter section.
7. (Previously Presented) A large capacity dispensing device according to either one of claim 4 and claim 5, wherein a magnetic section capable of exerting and removing a magnetic field into the small diameter section of said dispensing cylinder, is provided at a predetermined position in the vicinity of a path of vertical movement of said small diameter section.
8. (Previously Presented) A large capacity dispensing device according to either one of claim 4 and claim 5, comprising an optical measuring section capable of optically measuring a fluid level in said dispensing cylinder.
9. (Previously Presented) A large capacity dispensing device according to claim 8, wherein said optical measuring section comprises a CCD camera with an optical axis along an axial direction of said dispensing cylinder, and a mirror which reflects light from said dispensing cylinder into said CCD camera.
10. (Previously Presented) A large capacity dispensing device according to claim 9, wherein said optical measuring device is capable of relative movement relative to two or more dispensing cylinders.

11. (Original) A large capacity dispensing device according to claim 4, wherein an identifier is affixed to a container placed in said container placement area which identifies said container, and which comprises a readout section which reads the identifier affixed to said container.

12. (Original) A large capacity dispensing device according to claim 11, wherein said identifier is affixed to a tag provided in a detachable manner on said container.

13. (Original) A large capacity dispensing device according to any one of claim 4, claim 11, and claim 12, wherein said container placement area comprises a temperature adjustment section which adjusts the temperature of containers placed in the area.

14. (Currently Amended) A method of using a large capacity dispensing device comprising: a suction and discharge step for sucking or discharging a predetermined fluid to or from a container by using:

[[a]]the container placed in a container placement area, and;

one or more dispensing cylinders having, each of the dispensing cylinders

comprising: a small diameter section, a large diameter section which communicates with said small diameter section and is capable of holding fluid, a sliding section provided in a slidable manner within said large diameter section which enables fluid to be sucked and discharged to and from said large diameter section through said small diameter section, and a connection section which connects said sliding section in a detachable manner to a suction and discharge mechanism which drives said sliding section connected to the sliding section so that the sliding section is axially positioned between the connection section and the small diameter section; and

a suction and discharge mechanism, the suction and discharge mechanism
comprising: an actuating part which connects to each of said connection sections in a detachable manner and drives said sliding sections, and a non-actuating part comprising
one or more fitting sections, each of which fits a respective one of said large diameter

sections in a detachable manner to said suction and discharge mechanism to secure said respective large diameter section to said suction and discharge mechanism;

and

a movement step for moving said one or more dispensing cylinders relative to said container placement area.

15. (Original) A method of using a large capacity dispensing device according to claim 14, comprising a sheath fitting step for moving said dispensing cylinder to a position in said container placement area where said sheath is placed, and fitting said sheath by lowering said dispensing cylinder so that said sheath covers said small diameter section of said dispensing cylinder.

16. (Original) A method of using a large capacity dispensing device according to claim 14, comprising an operation checking step for, during said suction and discharge step, checking the result of suction or discharge, by optically measuring a fluid volume within said dispensing cylinder.

17. (Original) A method of using a large capacity dispensing device according to any one of claim 14 through claim 16, comprising a container placement checking step for checking the placement of a container in said container placement area, by reading an identifier of a container placed in the area.

18. (Previously Presented) A method of using a large capacity dispensing device according to any one of claim 14 through claim 16, comprising a step for adjusting the temperature of a fluid by using said dispensing cylinder to transfer a fluid to a container where a temperature adjustment section which adjusts the temperature of said container is provided.

19. (Previously Presented) A method of using a large capacity dispensing device according to any one of claim 14 through claim 16, comprising a gap removal step for eliminating a gap

between a connection section of said dispensing cylinder and a connection target section provided on said suction and discharge mechanism which connects to said connection section.

20. (Previously Presented) A method of using a large capacity dispensing device according to any one of claim 14 through claim 16 comprising; a step for moving a small diameter section of a dispensing cylinder vertically to a magnetic activity region provided in a path of vertical movement of said small diameter section, and a step for exerting a magnetic field into or removing a magnetic field from said small diameter section in said magnetic activity region when a solution in which magnetic particles are suspended is sucked or discharged using a dispensing cylinder.

21. (New) A large capacity dispensing device according to claim 4, wherein the sliding section comprises:

a disk-shaped piston which slides inside the large diameter section;

a rod, one end of which is secured to the piston, wherein the connection section is provided at the other end of the rod; and

a tube supported by an end of the large diameter section that axially opposes the small diameter section, the tube having a diameter and being positioned, relative to the rod, such that:

the rod passes through the inside of the tube,

relative axial movement between the rod and the tube is permitted,

the rod is substantially axially aligned with the large diameter section at the end of the large diameter section that axially opposes the small diameter section, and

the tube is axially positioned between the piston and the connection section and thereby prevents the piston from exiting the large diameter section through the end of the large diameter section that axially opposes the small diameter section.

22. (New) A large capacity dispensing device according to claim 4, wherein the sliding section comprises a tube supported by an end of the large diameter section that axially opposes the small diameter section, the tube comprising a flange; and

wherein the fitting section comprises a cylindrical sandwiching member that is axially positioned between the flange of the tube and the end of the large diameter section that axially opposes the small diameter section, the cylindrical sandwiching member clamping the tube in an elastically energized state.

23. (New) A method of using a large capacity dispensing device according to claim 14, wherein the sliding section comprises:

a disk-shaped piston which slides inside the large diameter section;
a rod, one end of which is secured to the piston, wherein the connection section is provided at the other end of the rod; and
a tube supported by an end of the large diameter section that axially opposes the small diameter section, the tube having a diameter and being positioned, relative to the rod, such that:
the rod passes through the inside of the tube,
relative axial movement between the rod and the tube is permitted,
the rod is substantially axially aligned with the large diameter section at the end of the large diameter section that axially opposes the small diameter section, and
the tube is axially positioned between the piston and the connection section and thereby prevents the piston from exiting the large diameter section through the end of the large diameter section that axially opposes the small diameter section.

24. (New) A method of using a large capacity dispensing device according to claim 14, wherein the sliding section comprises a tube supported by an end of the large diameter section that axially opposes the small diameter section, the tube comprising a flange; and

wherein the fitting section comprises a cylindrical sandwiching member that is axially positioned between the flange of the tube and the end of the large diameter section that axially opposes the small diameter section, the cylindrical sandwiching member clamping the tube in an elastically energized state.